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Abstract

The storage, the processing and the information management that are now present in the stage of the technologies of communication, will allow the adoption of a new way of working in a organization or in a company and can introduce new models of offices and corporate offices which are established on concepts grounded in a technologic system. These new office models will completely modify the connections of a company with its customers, suppliers or partners in the productive chain. As a result of this, there will be the so-called virtual organizations. This virtual concept can be applied for the operation of any organization or virtual offices.

With this type of work, known as telecommuting, the organizations and specially those called virtual, will be subjected to the condition of reviewing their treatments regarding production line, connections with customers and suppliers, the way how to utilize the office and other important revisions. Thus, in the coming years, the virtual organization or virtual enterprise will no longer be seen as a group of people present in a special entity but faced as a series of connections at a distance and not based on physical presence. The company will become a remote intellectual space.

Keywords: Teleworking, mobility, virtuality and participative management.

Virtual Organizations and their models

The rapid advancement of information technology and the actual structure of the interconnected communications became possible a new concept of virtual organization. Although some organizations have already adopted with more or less intensity some of the basic principles pertaining to the model of a virtual organization, it may be observed by its recent appearance, that in the theoretical management field, this fact has not yet the deserved attention from researchers of the Administration community. According to the acquaintance of Davies (1990), a pioneer in forecasting the appearance of virtual organizations, in the future organizations should be able to “operate somewhere, on anytime, and with very little tangible physical assets”.

Virtual organizations offer products or services online. In accordance with David and Malone (1992) “a virtual product is one whose concept, design, components and production and distribution operations are available in the computer memory.” Due to the principles of modular engineering, a virtual product or service can be electronically configured by consumers who act as agents of its personalization. This is possible through a choice or a selection of modules and accessories that will compound the final product and that will meet the customer or consumer desires and needs. The virtual organization must have an entire infrastructure of information technology that makes possible to offer its products on a website and also to corporate clients. These business alternatives through electronic transactions are known as acronyms (B to B – Business to Business) when the client is another organization or (B to C – Business to Consumer), when the clients are the final consumers. It may occur in the most advanced virtual

organizations to utilize specialized electronic trading companies in order to contact a corporate e-commerce or a final consumer and to avoid investments on their own structures.

The interactive electronic connection with these customers or consumers may be accompanied with special software like CRM – Customer Relationship Management, or with a program of support in the management “online” of relations with customers or consumers. This software provides many possibilities as an identification of the electronic or analogic signal to contact the customer or consumer; gives a special support to the managers who may favor the customer with an individualized care; it records all the steps of the current interaction and also provides an historical past of the client regarding his profile and his purchasing power.

As regards to the expectation of prompt attendance by the customers or consumers of virtual organizations, that is called by their executives as a pursuit of care in real time, these organizations must have the attendance processes fully integrated with other business processes that are operated in the internal environment of the company. In other words, they must have an integrated management system. Thus, among others, the functions of accounting, billing, inventory management, payments and receiving accounts are all processed by integrated management systems often based on ERP – Enterprise Resource Planning. The integrated systems built and based on this technology also allow through the features offered by the module SCM – Supply Chain Management, an “online” integration with the suppliers. Thus, the purchases of a virtual organization can be accomplished through direct electronic transactions. The practice of e-procurement, that is, the search and acquisition of suppliers through the collection of electronic offers to furnish goods or services, makes possible the realization of a price competition online. This proceeding is grounded on appropriate software and has been widely used by virtual organizations for the integration of processes with their suppliers of components or services first with the purpose of meeting the demands of their corporate customers or final consumers.

The virtual organization, being present with a site of available access, will operate in full-time since its clients and consumers will have electronic access from anywhere and at any time, presuming that they have the technological means to access the network of internet. In order to store all information generated by an effective action of internal business processes and by relationships with suppliers, partners and clients, virtual organizations become dependent on data warehouses that allow the management based on integrated information. Can be used, for example, the BI software – Business Intelligence that seeks information from internal data warehouses and external sources with which the virtual organization has relationships, making them more attractive to managers as regards to a better understanding of business opportunities.

Besides the heavy investment in information technology, virtual organizations are characterized by the effort to avoid making investments on fixed assets, or in other words, the acquisition of tangible assets, such as buildings to their offices or central offices, storage, fleet transportation for the distribution of products, special devices to carry out the necessary operations to deliver products and services. In this sense, one can say that organizations, rather than make heavy investments on tangible assets, seek to make use of partnership with other companies in order to avail a speed network to deliver value to customers. These organizations establish partnerships and have a wide range of outward activities. On other hand, they seek market products of their own suppliers and subcontract others factories to produce their products and also utilize logistic operators to send them away in order to be free of investments in fixed assets or in other tangible assets. With this proceeding they keep their focus on interacting with customers and on managing information with their supply chain.

Venkatraman and Henderson (1998) argue that the virtualization of organizations can be the result of a strategic decision to implement a virtual architecture. This means acting on three interdependent vectors, that is, to create conditions to enable a “virtual meeting” with the client and to enable the delivery through virtual integration online with suppliers; to add new knowledge through a virtual expertise. This means to use the knowledge of professional partners who contribute through network and telecommuting and that are paid for added knowledge to projects of new products or services that are developed by the company. Now it is possible to identify organizations that use virtual electronic network to launch a new design of concepts and technological solutions in order to stimulate professional surfers, without employment ties and to contribute with their knowledge to solve design and production problems described on their websites.

When the knowledge obtained by this process of gathering expertise is incorporated, it will permit to the collaborator to receive for a specified period, the aggregate royalties of the technological solution and sharing from the selling of products, processes or services that incorporate his knowledge.

Another peculiar feature of virtual organizations is the tendency to stimulate some of their employees to use mechanisms of telecommuting in order to reduce physical presence in an office or in other physical departments of the organization. It is clear that this is only possible when the instruments and tools required to perform the work

may be moved to other locations as the employee residence. This peculiarity of Telework in virtual organizations will be addressed later in this work.

Having made these considerations about the philosophy and about the necessary technologies and the various processes of virtual interactions with customers, suppliers and other partners, we can conclude that the most appropriate structure to represent a model of virtual organizations is the network. This network involves the virtual organizations and electronic communications lines that are established with a relevant public. Virtual organizations, in fact, are more dedicated to manage the extracted knowledge of interactivity with their customers than traditional organizations do.

The structure of a virtual organization reveals that this organizational model is integrated and virtually interacts with customers, giving them opportunity to participate in a process of customizing the products purchased. It also allows a network of suppliers and service providers that are deployed in real time to complement its activity or even produces a condition as a subcontracting of its essential or complementary business activities. With these procedures, the virtual organization may have the strength and capacity of many companies digitally integrated in its network of value and it avoids investments in tangible assets. Likewise, it can work with an own or an independent team throughout the country or throughout outside without concentrating them in a specific physical space. These teams are covered by the sharing of corporate databases that may be based on a space provider for data storage. The use of Teleworking enables worldwide virtual organizations rely on the expertise of people who are willing to collaborate with solutions offered through internet and who will earn by the knowledge effectively aggregated and used in the product or process.

It is a practice widely used in these organizations to establish instantaneous partnerships with who can assist in customer service. Likewise, global organizations can hire temporarily the idle capacity of a competitor in order to meet the demands of their customers and consumers and to use the resources of electronic purchases through electronic network.

The Emergence of Telework in the Information Society

Teleworking is a phenomenon of our times, a product of the working society in the era of technology. According to Chaparro (1996, p.3) we are living since some time in the “information society” what is an absolutely real condition. For this reason, it is a so well characteristic that distinguishes this time from any else before it and consists of a gradual process of transformation which is the result from the use of personal computers and what is more important, from the massive resources (hardware and software) that allow companies to be connected with one another by the use of Internet and Intranets.

Still, according to Chaparro, “in this new society, information replaces the old agents of production and those that created wealth. Manual labor yields its place to intellectual work. Power is based less on physical and material parameters and it turns more to the ability to store, manage, distribute and create information.”

As regards to automation, Chaparro (1996, p.12) says: “The most part of working tasks is being automated and it is defined not in terms of manufacturing, but in terms of gathering information, and in solving problems, in the generation of creative ideas and in the ability to answer flexibly to new situations or to act with flexibility when someone interacts with others in the workplace, because the simple mechanical work is already performed by the machine.”

As regards to globalization(Chaparro,1996) an information society has a vocation to be a global society. This globalization is easily measurable, because in former days one only could buy services and products at the local market and today with a simple phone or with a credit card he can buy anything on everywhere in the world. Communications erased, therefore, the frontiers of all kinds, whether being geographical, ethnics or religious. In an article entitled “The Virtual Organization: How to trust in people who we do not see,” Charles Handy (1995) states that:

“The offices in 20 years will no longer have a determined physical place. People will know their colleagues by the screens of computers.

In such environment, the actual organizations, based on permanent control and audit, may not work. It will be necessary to establish concepts of relevance and confidence among office members. On the other hand if the trust continues only for some and if the virtual organization can not incorporate it for every member without exception, it will cease to be a hope and will become a new disappointment.”

In the same article, Handy refers how he imagines the office of the future and watches it as a virtual working environment, a concept really different and complementary to Telework, here called “virtual organizations”.

“Soon, when everyone will have a cell phone, the phone will no longer belong to the place. And this world will be much different than it appears today. We may call everyone without knowing where he is and what he is doing. The conventional office as physical basis for our phone – with someone ready to answer the calls and with a line connected to the wall – will become, therefore, something old and a very expensive concept.”

Thus, Handy demonstrates the ability to anticipate other scholars in their analyses of the future, because he sees the new work environment as “clubs”, a place where employees will gather, eat, greet and have flexible locations reserved to perform their professional activities that will not fit people who still have to occupy the same spaces in companies.

In terms of managerial dilemmas regarding the benefits of management model, we must rediscover how to run organizations more based on confidence than on control. It also should be useful, to work and manage people that can not be seen, except for previously scheduled times, because it is necessary for a good performance of virtual work to have confidence and to keep in mind that technology alone does not meet the organizational goals, particularly in an environment with characteristics mentioned above.

The Telework in Practice

Telework is, therefore, a really work in the fully conception of the term. Here it is defined as being one that is not appropriate to an employer. Apparently this may appear as an obvious concept, but it is the best definition, because Teleworking is often confounded with a freelance work or with other terms in this reasoning line. However, the second element that defines Teleworking as a work is the fact of being a work at distance and the third element is that it uses information technology and communications to be performed. As a matter of fact, this necessarily involves the transmission of work product, whether data or information, as a means of communication between the employee and the employer. It should be noted, that in this aspect, regarding the means of communication, it is not important what or where they are, a phone, a fax or other more sophisticated such as local area networks or satellites, electronic mail, videoconferencing, etc. Telework is, therefore, a consequence of the new technological age in which we operate.

From this point of view, one can understand that teleworking is a steady employment held at a distance, where the employee or the service provider works in a physical location other than the traditional office and it can be in his home, in a virtual office or in another alternative environment.

Thus, Coates and Jarrat (1995, cap.1) understand as telecommuting: “One of the most important development in this century is the “distributed work”, the work done at home, in a satellite center, at a car in the street, at airplanes and at hotels, or where else someone can be connected to use telecommunications with his partners.” However, he should remember that telecommuting is a way of working particularly evidenced by all kinds of companies.

In order to adopt Telework and before beginning its deployment it is necessary to obey some basic rules. As regards the well succeeded organizations that have implemented this program, they have already developed regulations and guidelines that embrace various topics as eligibility, personal relationship with the company, risk management, purchasing equipment, technical assistance and responsibility and protection about information.

Mello (1990,p.50) in his book ‘Telework’ addresses the following analysis on the implementation of Telework, specially in virtual organizations:

- Planning tasks
- Equipment used for Telework
- To work at a home office
- Communications

Planning tasks

To implement the Teleworking, the first activity is to identify the tasks that can be done while practising it, because we know that for some activities the work is better done outside the traditional office.

In that sense, one should consider the following variables:

- As regards to the Agenda of Work – The first initiative is to choose the days that one will work at distance. It is much easier for everyone to know in advance whether or not everybody will adopt telecommuting continually on the same days during the week. When it is impossible to know in advance how many days one should work, it can be chosen one day a week. Once determined the days of Telework, we must plan their schedules and to develop work plans regarding the production of these days.
- As regards Flexibility – For the telecommuter, the ideal is to have flexibility, ie, be simultaneously available to serve his customers, colleagues and supervisors. As it is possible to make some choices, the person chooses to work at the same time of the office or to start earlier or later than it, or to prefer another time of his convenience.
- As for programming – Remember that the person needs to anticipate and to take home materials and resources needed for a day of telecommuting work. The ability to organize the work on a telecommuting day evolves in proportion the person gets accustomed to this routine.
- Equipment Used for Telework – A telephone is essential. To specify whether or not a computer will be needed, it will depend on the work done, because, for a simple review, research, reading, planning, or making phone calls it does not require computers. However, the use of certain equipments, services and software makes Telework easier to run, such as voice mail and email, because they allow the person to be in contact with the office without interrupting colleagues or himself. An answering device and pagers are also useful. As regards this, it is suggested that clients should not know that the Teleworker is at home, if this is the case.

Working at the Home Office

When there is an option to Telework at home, it is import to gather the family and to communicate this decision to it in order to become informed about these new working conditions. In this opportunity it should be established rules and the possible changes in the organization of the home. Thus, it is essential on doing a specific activity, to have discipline and to establish the beginning and the end of the workday as if it were a common day at a conventional office.

Ricardo Semler – the famous entrepreneur and writer- is pointed out as an example of well-managed behavior, who adopts the following work habits: “He uses the computer to monitor images of the persons that enter and leave from his home and remains plugged into the company. He does not go more than once to the company and his contacts with it do not obey or respect weekends or special times. For more than ten years he does not sign the checks of the company; in the three-story building that houses the headquarters of the group, he does not have his own room neither a vaguely demarcated for his car in its courtyard.”

Communications

The key to success in Teleworking is the statement of the work. Communication has to be with everybody, but especially in a spontaneous manner between the Teleworker and his colleagues. When someone works outside the office he will not have much of that spontaneous communication. At the beginning his colleagues compensate the absence often calling him on the phone. But eventually, they bind the scraps together and do not call him many times to discuss the company affairs. Most Teleworkers notes that there is less communication face to face because it can be replaced on many occasions by telephone and by written communications and for example, by email. Naturally in case of the first contacts, negotiations or to study visual information that can not be shared remotely, are required meetings “face to face”. However, the person finds that, over time, the number of the meetings decreases but those that happen, are better prepared and are more profitable when Telework is practiced.

Case in Point: Semco Group.

Enterprise and Historical Evolution

Known outside of the sectors in which it operates by the controversial virtual system of participative management, the Semco Group has successfully deployed its system of “non-territorial office” (virtual office) as a resource for implementation of Telework. It is a business group formed by companies operating in the sectors of environment,

metallurgical, mobile technology, service, inventory, management of factories and shops, building management and real estate.

A Non Territorial Office (Virtual Office)

In order to seek the elimination of status symbols that represent hierarchy and also to provide more comfort to its employees, Semco Group has particularly established through its processes department, a “non territorial office” (virtual office) that even being encouraged to be adopted fifteen years ago, according to Semler (1988, p.35) it is recognized as being still a very innovator business concept in Brazil. It is known that in most companies, the changes and transformations are often made taking into account the demand or the space for the workplace. In Semco case, unlike the usual, and there is not a reference model in the country, its actual goal was to give an opportunity to any employee, regardless the position occupied by him, to exercise leadership in the situation when there was a problem related with his expertise area.

The transformation at Semco workplace began with the construction of the first virtual office in the former garage of the company where round tables with internet access points were put. After a general modification, this workplace looks like a showroom of an architectural firm, with light furniture, modern design with counter sink to wash, spaces reserved for temporal work, and also has espresso coffee, juices and soft drinks, thus, Semco has today around 400 employees that come with their laptops to perform their duties. They are connected to the network and start to work without having their own desks.

Thus, watching the modus operandi of the procedures of these employees in the firm, we can consider:

- As for work – They make a reservation in advance of the day and of which time they want to use the space (on company website in internet), where there is a collective statement of stations installed on the ground floor and on the first floor of the building and also the positions which are free for the next day. The reserve also can be done in the office, at a terminal installed on the reception at the intranet of the main building.
- As for the layout – There are a pantry and a living room with tables and a self service of cappucino coffee machines, and also a refrigerator, a winter garden and collective stations to work where four people can work at a time.
In this space the chairs, the desks and the computers do not have owners, the workstations coexist with fixed stalls and tables. In this work scheme, things like divisions, timecard and the head “disappear”.
- As for paperwork – It has to fit in a folder like a follow up and in a type of file with wheels (a parking lot of folders and files) that has to be near the “masters” and go along with them during their walks around the office.
Thus, it appears that who chooses the non territorial system, decrees the end of the paperwork.
- As for the organizational structure and people – Semco has no organizational chart, for it was abolished more or less 20 years ago. The firm does not use formal organization charts, since it can only lead who has the respect from whom he leads. When it is necessary to use the chart, it is done in pencil on a temporary basis and soon “disappear”.
The terms like “employee,” “officer,” “subordinate” and others similar to the human capital of the company are not used by it, because there is a whole team and there are only “persons” as are called those people who work at Semco Group.
It is worth to note that this system of virtual work and at distance (non territorial) is subjected to rules such as: somebody can not sit in the same place or beside the same fellow for two consecutive days. Such a restriction, after all, is a way to encourage the interaction among employees, so that they can meet and exchange ideas.

Incidentally, the perspective of Ricardo Semler, in July 2000, with respect to the virtual model, was as follows: “In setting up the new workspace in Semco (a non territorial office) it may seem at a first glance that it is a common virtual office, which has the following characteristics:

- There are not closed offices, neither are they particularly appointed to a person.
- There is a multiple use of a single workstation because many people use their desks only a part of the day or a part of it during the week.

According to Ricardo Semler (2000) these features are desirable, but are not the main focus of this innovation done by Semco, because it also seeks to meet the following conditions:

Eliminate gradually the signs installed in the hierarchy, such as power standing, spaces and perks, leaving to leadership only conditions about conquering the real respect of their subordinates through the competence and agglutination capacity.

The ability to watch upon people should be reduced or eliminated. With no visual or physical control, people begin to be responsible only for the results obtained and not for time, clothes, manner of acting or their method of work.

It can also be observed a substantial decrease in loosing time with the transit system and an important decrease of stress on schedule time, of the stress of corporative monitoring and that about the lack of freedom that makes possible to organize family life.

There should be also an increasing independence, where a laptop, remote data and the self-discipline should take the place of tiring, irritating and unintelligent routines.

However, only people in higher positions or in independent functions have some of these privileges at Semco. The company seeks to involve more people, aiming to reach almost all of its human assets. Even those who can not be far from their fixed workplace, because of the nature of their functions may have more freedom than they have today.

In this virtual model, according to Semler, people will be enticed into the idea of scheduling their work time with flexibility and it will also be possible to give less satisfaction about the way of doing things and to enjoy the freedom that is provided by a free movement. Still, according to Semler, this happened “for two reasons: first, we all have some authoritarian condition and nobody knows at least one democratic company in the world, what means a shame and a delay in life. The second reason is that a transformation in the manner of thinking (like a leap) of humankind never happens naturally. In anthropological terms, humankind changes very slowly, and groups (tribes) think that they have to be strongly armed against any radical change”.

Lessons learned

The change in the Group of Semco Companies meant for the most of people who work there, to think and to express with freedom.

Professionals can visualize all the complexity of the system, the relationship between their work and the work of other people, and how this work is done with enthusiasm and commitment and how this has resulted in customer satisfaction and in business success.

The skills are developed almost naturally, as a consequence of participative management previously deployed. Semco relies upon the persons who work in its staff and gives them autonomy, a dignified treatment, and it also acts democratically when has to take a decision or to solve a conflict. It has the commitment from these persons on getting good results and, in turn, it rewards them with profit sharings.

Semco was guided by a process in implementing these changes, although this name is not mentioned by the company. Professional people have common goals and their positions embrace several activities with more responsibility. There are few people in hierarchical levels, and these play the role of coaching, that is, they act as advisors and trainers of other people regarding the practice of their professional activities in the company. Semco has gone through many changes, it has already lessened, expanded and diversified its area of activity and it does not control its employees anymore. It has already “the non territorial offices” and has determined the participation of everybody in many decisions, but according to its plans, it still needs much time until becoming the company it intends to be.

In this sense, there is a message presented below, from Ricardo Semler, urging his employees to embrace the idea of non-territorial office:

“So you can see that the new non territorial space is really more than a very modern adaptation of a concept. It is an attempt to liberate people from unneeded control, from the pollution and the tyranny of traffic and from being under the influences of any unintelligent system that compromises personal life, creativity, health and consequently people happiness.

As regards the company, we want to share the productivity and the profit that come from interested and happy people without who, we cannot exist. And we believe that these new offices when used in this new way (as a point of support, left at the person's discretion when it is necessary to come to the company) will be a catalyst for this new way of working.

There is not another company in Brazil, as it is known, that uses completely non territorial offices, where even its directors do not have a determinate place and where people are encouraged to find their own balance between professional and personal life, so becoming again, responsible for their fate, and making the company a healthy place to work."

Conclusions and Final Remarks

It can be concluded that virtual organizations are a new way of designing, configuring and operating business activities for the production of physical products or services. They offer to customers and consumers as a benefit the fact of being enabled to participate in the configuration of the products and services, choosing modules that approximate the product to the customization desired by the buyer.

They operate with enough speed and take advantage of opportunities that have appeared in the electronic markets. They utilize the interactive and integrated association with their partners in order to avoid tying up resources in tangible goods. They may use their own teams or independent ones that provide services to them using the devices of Telework.

The experience of the Group Semco of Companies allows us to observe that there are benefits and restrictions as regards the use of Telework.

It can be concluded that we know very little about the implications that the virtual organizations bring to the economy as a whole, especially in terms of employment relations at distance and about changes in concepts of career and workplace.

As a final consideration about this subject, it is recommended new studies that were not focalized in this work. For example, it should be useful to make studies that could identify what changes have to be incorporated into management models and into the training of future managers or employees to enable them to act in organizations that are more and more becoming virtual ones. Likewise, there is the necessity of making a study by measuring in a comparative way the productivity of workers in company and to compare this productivity with those that were gotten by the Teleworkers with similar activities. It ought to be undertaken many others studies related to the emerging virtual organizations.

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